



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,694	11/21/2003	Gary J. Crow	018695-9325-00	1344

23409 7590 06/09/2005

MICHAEL BEST & FRIEDRICH, LLP
100 E WISCONSIN AVENUE
MILWAUKEE, WI 53202

EXAMINER

JEFFERY, JOHN A

ART UNIT	PAPER NUMBER
----------	--------------

3742

DATE MAILED: 06/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/719,694

Applicant(s)

CRAW ET AL.

Examiner

John A. Jeffery

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15, 16, 19-32, 34, 35, 38, 40-52, 54 and 55 is/are rejected.
- 7) ☒ Claim(s) 14, 17, 18, 33, 36, 37, 39, 53, 56 and 57 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 20040322.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Title of Invention

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "Ventilating and Heating Apparatus With Heater Shielded by Tapered Discharge Duct."

Abstract

The abstract of the disclosure is objected to because of the following informalities:

(1) The first sentence is incomplete and must be rewritten to form a complete sentence.

(2) The abstract must include a brief description of the feature claimed in claim 38 (recessed edges of cover).

Correction is required. See MPEP § 608.01(b).

Drawing Objections

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, (1) the imaginary cylinder in a direction normal to the discharge outlet, and (2) the imaginary cylinder located in the portion of the discharge duct containing the heater (claims 2, 4, 25, 27,

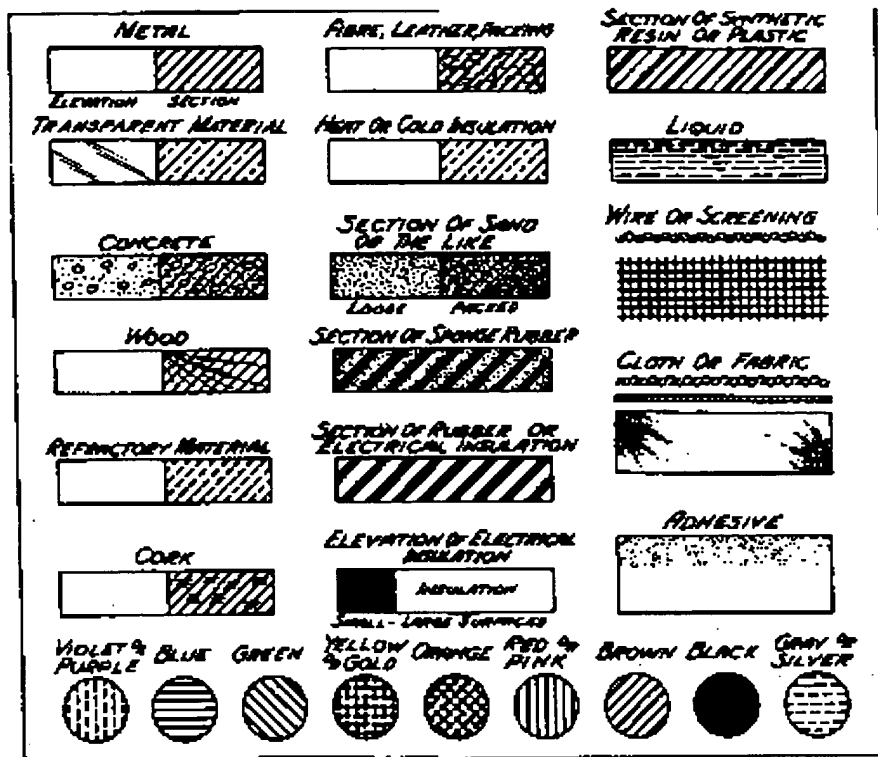
Art Unit: 3742

41, and 43) must be shown or the feature(s) canceled from the claim(s). Applicant must show the imaginary cylinders with dashed lines and assign the cylinders unique reference numerals that are referred to in the specification. No new matter should be entered.

The drawings are also objected to because of the following informalities:

Fig. 15: Gasket 226 is incorrectly hatched for metal. Accordingly, proper cross-sectional hatching is required to properly denote thermally insulative materials for gasket 226 in accordance with MPEP 608.02 (see the drawing below for proper hatching examples). To clearly show this feature and to ensure adequate thickness for the insulative hatching, applicant must add an enlargement of the relevant portion of Fig. 15 focusing on the detail adjacent gasket 226, edges 46, and cover 34. A figure label related to Fig. 15, such as Fig. 15A, is recommended for the new figure. Applicant is reminded to amend the specification accordingly in conjunction with the drawing change; however, applicant is cautioned against the inclusion of new matter.

Art Unit: 3742



Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of

Art Unit: 3742

the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 8, 9, 19, and 25-27 are rejected under 35 USC 102(b) as being anticipated by Karg (US 1,644,595). Karg (US 1,644,595) discloses a ventilating and heating apparatus comprising main housing 7, fan housing 52, and fan 47 located within fan housing 52. Air is directed through discharge duct 48 and exits via discharge outlet 56. Electric heater 41 is located within the discharge duct and is "shielded" from discharge outlet by walls 53 and 54 of the discharge duct. See Figs. 5-7.

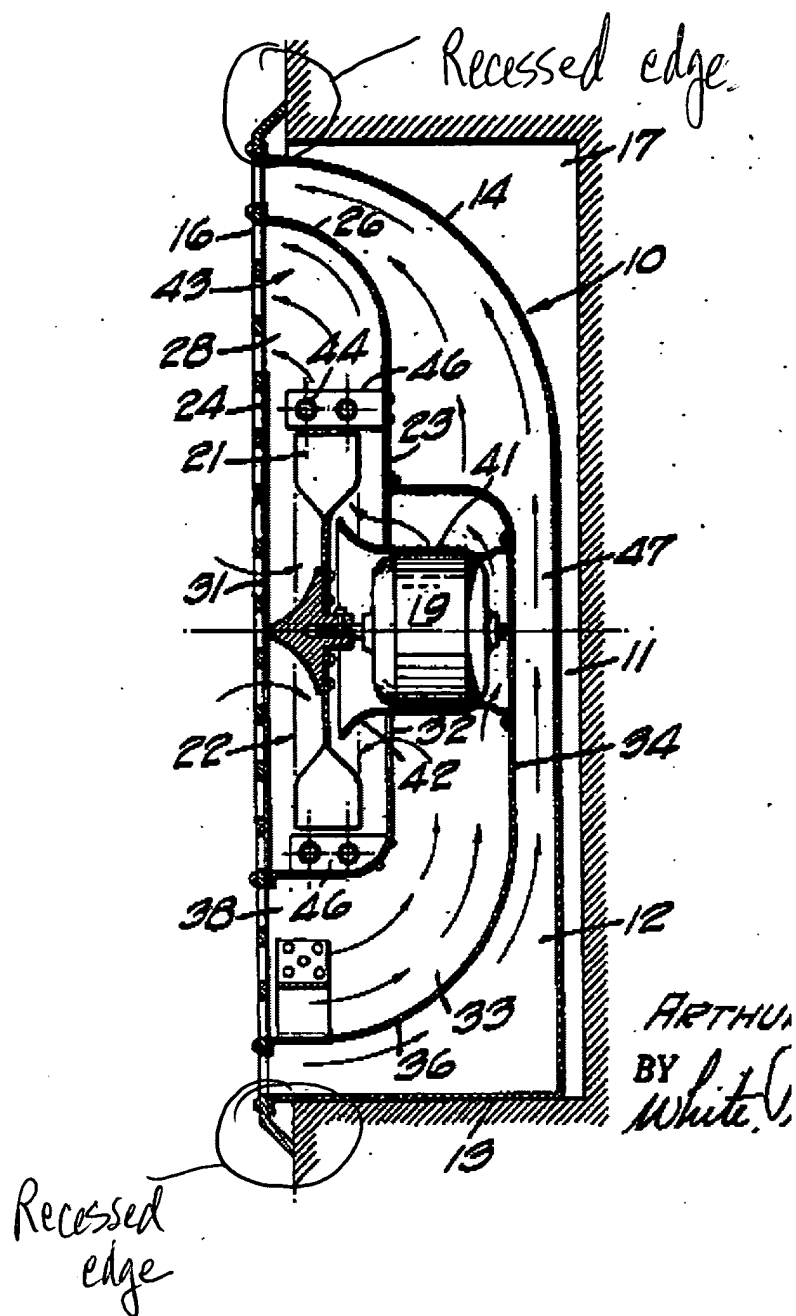
Regarding claims 9 and 19, note that the cross sectional area of the discharge duct is tapered towards the discharge outlet. See Page 2, lines 51-79.

Claims 38, 40-43, and 45 are rejected under 35 USC 102(b) as being anticipated by Kercher (US 1,982,139). Kercher (US 1,982,139) discloses a ventilating and heating apparatus comprising main housing 10, fan housing disposed in the main housing with discharge duct 26, heater 44 secured within the discharge duct having discharge outlet

Art Unit: 3742

43. See Figs. 1 and 2. A screened cover 16 has a "discharge aperture" that encompasses the outlets of both ducts 26 and 14; thus, the cover's discharge aperture has a larger cross-sectional area than discharge outlet 43. In addition, Kercher (US 1,982,139) recesses the edges of screened cover 16 with respect to the discharge outlet 43. See Fig. 2 of Kercher (US 1,982,139) which has been enlarged and annotated for clarity.

Art Unit: 3742



Joint Inventors -- Common Ownership Presumed

Art Unit: 3742

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligations under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103.

Claim Rejections - 35 U.S.C. § 103(a)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 7, 20-24, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karg (US 1,644,595) in view of Eisele (US 3,025,382). The claims differ from the previously cited prior art in calling for removably securing the heater in the discharge duct. But removably securing electric heaters within discharge ducts is well known in the art. Eisele (US 3,025,382), for example, secures an electric heater within a duct 22 via brackets 32, 42 and removable fasteners 36, 44. See Fig. 2 and

Art Unit: 3742

col. 2, lines 16-39. Such a mounting enables the heater to be easily removed from the duct for repair or replacement. In view of Eisele (US 3,025,382), it would have been obvious to one of ordinary skill in the art at the time of the invention to removably mount the electric heater in the duct of the previously described apparatus so that the heater is easily removed from the duct for repair or replacement.

Regarding claims 20-24, although Karg (US 1,644,595) does not disclose the exact ratios of cross-sectional area claimed, such ratios merely are the result of optimization of result-effective variables readily discoverable by routine experimentation by skilled artisans. It is well settled that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233,235 (CCPA 1955). Here, because the general conditions of the claim are met by the prior art, namely a difference in cross-sectional area, the specific ratio of cross-sectional areas claimed is merely an optimization readily discoverable via routine experimentation and does not therefore constitute a patentably distinguishable feature.

Claims 10 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karg (US 1,644,595) in view of Steingruber (US 2,445,250). The claims differ from the previously cited prior art in calling for an illumination device coupled to the main housing. But providing an illumination device in a main housing of a convection heater is conventional and well known in the art as evidenced by Steingruber (US 2,445,250) noting lamp 64 in Fig. 2. As noted in col. 5, line 68 – col. 2 and col. 8, lines 13-23, the

Art Unit: 3742

lamp 64 not only provides a glow effect that creates the illusion of an open flame when viewed from the front of the heater, it also provides a signal to the user that power is on. In view of Steingruber (US 2,445,250), it would have been obvious to one of ordinary skill in the art at the time of the invention to provide an illumination device coupled to the main housing in the previously described apparatus to (1) produce a glow effect that creates the illusion of an open flame when viewed from the front of the heater, and (2) visually alert the user that power is on.

Claims 13 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karg (US 1,644,595) in view of CA679120. The claims differ from the previously cited prior art in calling for removably coupling the fan housing to the main housing by engaging at least one protrusion on the fan housing with at least one aperture on the main housing. But removably mounting fan housings to main housings is well known in the art. CA679120, for example, removably mounting a fan housing 21 by engaging fan housing protrusions 23 with corresponding apertures 24 on plates 17, 18 that are part of the main housing. See Figs. 1 and 2. As noted on Page 7, lines 15-20, such a mounting enables removal of the blower for servicing. In view of CA679120, it would have been obvious to one of ordinary skill in the art at the time of the invention to removably mount the fan housing to the main housing of the previously described apparatus to enable removal of the blower for repair or replacement.

Claims 15, 16, 34, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karg (US 1,644,595) in view of Hynes (US 1,991,280). The claims differ from the previously cited prior art in calling for a first dividing wall to separate the main housing into first and second compartments with the ventilation fan assembly and an electrical compartment disposed in the first compartment. But dividing a main heater housing to form multiple compartments is well known in the art. Hynes (US 1,991,280), for example, discloses providing a "first dividing wall" in the main housing 15 thus forming a motor chamber 16 ("first compartment") and a heater chamber 17 ("second compartment"). See Fig. 1 and P. 1, col. 2, lines 17-40. As best seen in Fig. 1, the motor chamber 16 contains a ventilation fan assembly M and an electrical compartment enclosing electrical wiring located above the fan assembly. By physically separating the components, the fan motor and electrical compartment is protected from intense heat generated by the heating elements. In view of Hynes (US 1,991,280), it would have been obvious to one of ordinary skill in the art at the time of the invention to divide the main housing and locate the fan assembly and electrical compartment in one compartment in the previously described apparatus to protect the fan motor and electrical compartment from heat generated by the heating elements.

Regarding claims 16 and 35, the scope of the claim language did not preclude the "second dividing wall" 19 of Hynes (US 1,991,280) that partially subdivides the heater compartment ("second compartment") into sub-compartments located on either side of wall 19. Moreover, note electrical wiring in Fig. 1 that penetrates the wall

Art Unit: 3742

separating the motor and heater compartments thus entering the "second sub-compartment" as claimed.

Claims 11, 12, 30, 31, 38, 40-43, and 45-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karg (US 1,644,595) in view of Kercher (US 1,982,139). The claims differ from the previously cited prior art in calling for a cover with a discharge aperture with a larger cross-sectional area than the fan housing discharge outlet such that the cover's edges that define a periphery of the discharge aperture are recessed with respect to the discharge outlet. But providing covers with such edge structures are well known in the art. Kercher (US 1,982,139), for example, discloses recessing the edges of screened cover 16 with respect to the discharge outlet 43. Such a structure not only protects the interior components from damage and inadvertent contact, but also minimizes overheating of its edges.

In view of Kercher (US 1,982,139), it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a screened cover with recessed edges in the previously described apparatus to not only protect the interior components from damage and inadvertent contact, but also minimizes overheating of its edges.

Regarding claims 47-50, although Karg (US 1,644,595) does not disclose the exact ratios of cross-sectional area claimed, such ratios merely are the result of optimization of result-effective variables readily discoverable by routine experimentation by skilled artisans. It is well settled that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges

Art Unit: 3742

by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233,235 (CCPA 1955). Here, because the general conditions of the claim are met by the prior art, namely a difference in cross-sectional area, the specific ratio of cross-sectional areas claimed is merely an optimization readily discoverable via routine experimentation and does not therefore constitute a patentably distinguishable feature.

Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karg (US 1,644,595) in view of Kercher (US 1,982,139) and further in view of Eisele (US 3,025,382). The claim differs from the previously cited prior art in calling for removably securing the heater in the discharge duct. But removably securing electric heaters within discharge ducts is well known in the art. Eisele (US 3,025,382), for example, secures an electric heater within a duct 22 via brackets 32, 42 and removable fasteners 36, 44. See Fig. 2 and col. 2, lines 16-39. Such a mounting enables the heater to be easily removed from the duct for repair or replacement. In view of Eisele (US 3,025,382), it would have been obvious to one of ordinary skill in the art at the time of the invention to removably mount the electric heater in the duct of the previously described apparatus so that the heater is easily removed from the duct for repair or replacement.

Claim 51 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karg (US 1,644,595) in view of Kercher (US 1,982,139) and further in view of Steingruber (US 2,445,250). The claim differs from the previously cited prior art in calling for an

Art Unit: 3742

illumination device coupled to the main housing. But providing an illumination device in a main housing of a convection heater is conventional and well known in the art as evidenced by Steingruber (US 2,445,250) noting lamp 64 in Fig. 2. As noted in col. 5, line 68 – col. 2 and col. 8, lines 13-23, the lamp 64 not only provides a glow effect that creates the illusion of an open flame when viewed from the front of the heater, it also provides a signal to the user that power is on. In view of Steingruber (US 2,445,250), it would have been obvious to one of ordinary skill in the art at the time of the invention to provide an illumination device coupled to the main housing in the previously described apparatus to (1) produce a glow effect that creates the illusion of an open flame when viewed from the front of the heater, and (2) visually alert the user that power is on.

Claim 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karg (US 1,644,595) in view of Kercher (US 1,982,139) and further in view of CA679120. The claim differs from the previously cited prior art in calling for removably coupling the fan housing to the main housing by engaging at least one protrusion on the fan housing with at least one aperture on the main housing. But removably mounting fan housings to main housings is well known in the art. CA679120, for example, removably mounting a fan housing 21 by engaging fan housing protrusions 23 with corresponding apertures 24 on plates 17, 18 that are part of the main housing. See Figs. 1 and 2. As noted on Page 7, lines 15-20, such a mounting enables removal of the blower for servicing. In view of CA679120, it would have been obvious to one of ordinary skill in the art at the time of the invention to removably mount the fan housing to the main housing of the

Art Unit: 3742

previously described apparatus to enable removal of the blower for repair or replacement.

Claims 54 and 55 rejected under 35 U.S.C. 103(a) as being unpatentable over Karg (US 1,644,595) in view of Kercher (US 1,982,139) and further in view of Hynes (US 1,991,280). The claims differ from the previously cited prior art in calling for a first dividing wall to separate the main housing into first and second compartments with the ventilation fan assembly and an electrical compartment disposed in the first compartment. But dividing a main heater housing to form multiple compartments is well known in the art. Hynes (US 1,991,280), for example, discloses providing a "first dividing wall" in the main housing 15 thus forming a motor chamber 16 ("first compartment") and a heater chamber 17 ("second compartment"). See Fig. 1 and P. 1, col. 2, lines 17-40. As best seen in Fig. 1, the motor chamber 16 contains a ventilation fan assembly M and an electrical compartment enclosing electrical wiring located above the fan assembly. By physically separating the components, the fan motor and electrical compartment is protected from intense heat generated by the heating elements. In view of Hynes (US 1,991,280), it would have been obvious to one of ordinary skill in the art at the time of the invention to divide the main housing and locate the fan assembly and electrical compartment in one compartment in the previously described apparatus to protect the fan motor and electrical compartment from heat generated by the heating elements.

Art Unit: 3742

Regarding claim 55, the scope of the claim language did not preclude the "second dividing wall" 19 of Hynes (US 1,991,280) that partially subdivides the heater compartment ("second compartment") into sub-compartments located on either side of wall 19. Moreover, note electrical wiring in Fig. 1 that penetrates the wall separating the motor and heater compartments thus entering the "second sub-compartment" as claimed.

Allowable Subject Matter

Claims 14, 17, 18, 33, 36, 37, 39, 53, 56, and 57 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other Pertinent Prior Art

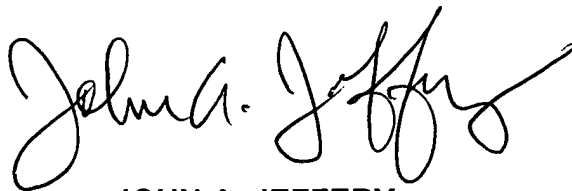
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant should (1) separately consider the art, and (2) consider the art together with the previously cited prior art for potential applicability under 35 U.S.C. §§ 102 or 103 when responding to this action. US 130, US 982, US 767, US 052, US 039, US 571, US 503, US 796, US 796, US 447, US 334, US 598, FR 616, US 174, US 427 disclose air heaters relevant to the instant invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John A. Jeffery whose telephone number is (571) 272-4781. The examiner can normally be reached on Monday - Thursday from 7:00 AM to 4:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans, can be reached on (571) 272-4777. All faxes should be sent to the centralized fax number at (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "John A. Jeffery", with a stylized, flowing script.

**JOHN A. JEFFERY
PRIMARY EXAMINER**

6/7/05